

Exceptional winter in the Baltic Sea

The past winter was remarkably warm in southern Finland with hardly any snow or ice. However, Lapland and northern Finland received more snow than in many years. Is this our new normal, and what are the implications for winter seafaring?

Senior Ice Expert Jouni Vainio from the Finnish Meteorological Institute has followed the Baltic ice situation for the past 30 years. The Finnish Ice Service produces daily ice charts during the winter months to assist in ice navigation and icebreaking. According to him, it is too early to draw conclusions about an ice-free Baltic Sea.

"Although southern Finland had hardly any snow or ice, northern Finland received extreme amounts of snowfall. Temperatures were higher than usual in the whole country," Vainio says.

"In northern parts of the Bay of Bothnia, ice began to form slightly earlier than usual, i.e. before the end of October. The ice thickness grew to 10 to 15 centimetres, and even though warmer winds arrived around Christmas, the ice did not melt. Strong winds additionally pushed the ice towards the shore."

Icebreakers are necessary

Vessels arriving in ports in southern Finland barely needed icebreaker assistance this year. However, nearly all vessels approaching ports in the northern Bay of Bothnia, i.e. Oulu-Kemi-Tornio, needed help from the three icebreakers Kontio, Otso and Urho stationed there.

"Ice in those ports, and the waterways to the ports, is broken up and refrozen countless times during winter, forming thick layers of brash ice. This is extremely challenging for vessels to move and turn in."

Future winters

The winter of 2010-2011 was unusually cold and the winter of 2019-2020 very warm. Vainio believes these are the two extreme situations, and normal winters in the future will be something in between, with ice also in the Gulf of Finland and the Bothnian Sea. Very likely winters will become shorter; beginning later and ending earlier.

"Even if the sea ice is thin, it will cause problems for vessels as winds push the ice towards the Finnish shores while Estonia and Sweden might have open water," Vainio explains.

Changing rules

"New regulations are lowering the ice-going capabilities of merchant ships, which means that they may not be able to manage even in easy ice. Icebreakers will therefore probably become even more indispensable and required for longer distances in the future."

"Merchant vessels are also growing in size, requiring wider ice channels than what can be achieved with current icebreakers."

Mild winters are not easy

Vainio wants to emphasise that although winters might become milder, it does not mean they will become easier.

"A tough winter is actually much easier for an ice-strengthened vessel sailing in an ice channel prepared by an icebreaker, than towing in brash ice for many nautical miles."

"Additionally, global trade is today very dependent on keeping schedules. Mild winters can eventually put more strain on schedules than hard ones," says Vainio. ■

